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Digital Entrepreneurship in Emerging Economies: The role of ICTs and local context

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ABSTRACT

Advances in digitisation and the development of information and communication technologies (ICTs) is creating opportunities for new types of entrepreneurial activities in emerging economies. However, there is very limited international business research to understand the nature of digital entrepreneurship in emerging economies. Using qualitative case studies developed in Cameroon I investigate how ICTs as operand resource shape the choices that digital entrepreneurs make when dealing with local contextual influences on digital entrepreneurship. Based on empirical analysis of the cases I develop five testable propositions about how digital entrepreneurs respond to local contextual factors in creating digital entrepreneurs.

Key Words: Digital entrepreneurship, ICTs, local context, emerging economy/market

INTRODUCTION

Advances in digitisation and developments in information and communication technologies (ICTs) is changing the international business landscape, transforming business practices and creating opportunities for new types of entrepreneurial activities. One such type

of entrepreneurial activity is digital entrepreneurship, defined as a new business creation opportunity generated by ICTs – internet, mobile technology, social computing and digital platforms (Davidson & Vaast, 2010; Oestreicher-Singer & Zalmanson, 2013; O'Reilly, 2007; Onetti, Zucchella, Jones, McDougall-Covin, 2012). Despite evidence of increases in the number of small digital enterprises, Javalgi, Todd, Johnston, & Granot (2012: 743) notes that 'academic enquiry to date has merely skimmed the surface as to how small internet firms in emerging markets' develop and grow. Existing research on Africa has so far focus on small businesses that simply adopt and use ICTs to improve their business performance (Kyobe, 2004; Adeboye, 1996; Gathege & Moraa, 2013). Digital entrepreneurs go beyond simply adapting and using ICTs. To them ICT is both the trigger for their entrepreneurial activities and the infrastructure that support stakeholder interactions (Lusch & Nambisan, 2015). In this paper I explore two research questions: 1) How does ICT shape the nature of digital entrepreneurship in an emerging economy? 2) How does an emerging economy's local context encourage digital entrepreneurship?

While the adoption and use of ICTs is a challenge, the fast growth in the diffusion of ICTs in many African countries over the past few years (Gathege & Moraa, 2013) suggest a research need to understand the nature of digital entrepreneurship in Africa. In this paper I develop five propositions about the nature of digital entrepreneurship in an emerging African market through a qualitative study of the experiences of baby owner-managers of new digital enterprises (Autio, 2005; De Clercq & Arenius, 2006). The case Cameroon is used to illustrate 1) the role of ICT as operand resource (Lusch & Nambisan, 2015) that shapes the nature of digital entrepreneurship and 2) the effects of local context - specifically technology and geographic contexts (Autio, Kenney, Mustar, Siegel & Wright, 2014) in encouraging digital entrepreneurship. Although I focus on a single country, the digital enterprises studied are international, if not global due to the nature of their online reach (Onetti et al., 2012).

LITERATURE REVIEW

Digital Entrepreneurship

Digital entrepreneurship is the practice of pursuing "new venture opportunities presented by new media and internet technologies" (Davidson & Vaast, 2010: 8). It is similar to traditional entrepreneurship in the sense that "digital ventures aim at generating a financial profit and are directly inscribed into the economic realm, such as creation of a new company or commercialization of an innovation" (Davidson & Vaast, 2010: 2). In digital entrepreneurship "some or all of the entrepreneurial venture takes place digitally instead of in more traditional formats" (Hair, Wetsch, Hull, Perotti & Hung, 2012: 3). Digital enterprises are different from traditional entrepreneurial ventures because they have different business models and can pursue their products, marketing and distribution activities using digital platforms (Hair et al., 2012).

Digital entrepreneurship ventures range from large "established firms that develop hardware, software, and networking technologies" to small start-up firms that use information and communication technologies (ICTs) to undertake their businesses activities (Rosenbloom et al., 1993: 462). In this study I am particularly interested in small start-up digital ventures. This include ventures operating in the ICT sector (e.g. online accounting, wifi-hotspot, phone backup, artificial intelligence softwares) (Vasilchenko & Morrish, 2011), social computing websites (e.g. for music consumption) (Oestreicher-Singer & Zalmanson, 2013) and small mobile and internet-enabled businesses (e.g. classification/cataloguing of specialised information, travel/recruitment agencies and buy-sell marketplace) (Javalgi et al., 2012).

The above discussion suggest the need to clarify the boundary between a digital entrepreneurial venture and a traditional entrepreneurial venture. In this article a digital enterprise is defined as one that engages in using ICTs to create value and to coordinate value

activities with customers and partners. Following Reuber & Fische (2011), this includes businesses whose core activity is to sell digitized products or services (e.g. multi-media production businesses) in addition to the categories of digital enterprises mentioned earlier. From this context, research on digital entrepreneurship excludes small businesses that simply utilise ICT resources to reduce costs, improve internal operations or improve customer services (Kyobe, 2004) through for example, the adoption of websites (Simmons, Armstrong & Durkin, 2008). Instead, ICT needs to be considered as a trigger or provider of entrepreneurship and innovation, in which ICTs or digital components expand or restrict entrepreneurial opportunities (Lusch & Nambisan, 2015).

To explore my first research question I focus on the digital entrepreneur, specifically the owner-managers of new digital start-ups. This is consistent with the view that digital entrepreneurship is still at an early stage in emerging markets, which suggest a research need to focus on newly-created digital enterprises. Given this focus on start-up digital enterprises I am interested in the entrepreneurial activities of baby business managers (owner-managers of new, entrepreneurial firms which are younger than 42 months old) (Autio, 2005; De Clercq & Arenius, 2006). This globally-recognised benchmark provides a good comparable indicator of newly-created businesses in emerging market. In particular, I am interested in the ICT competences and the market orientation of digital entrepreneurs.

ICT competencies are one core determinants of the success of a digital enterprise. Ashurst, Cragg, & Herring (2012) identify four important ICT competencies that enable a small digital enterprise to successfully innovate and integrate business processes that lead to value creation: IT leadership, business systems thinking, architecture planning, and making technology work. Reuber & Fische (2011) identify three internet-related firm-level ICT resources that determine success in internet-enabled markets: online reputation (being visible online and being seen as providing high quality service), online technological capabilities

(integrating web applications, customize online experience for particular markets and technological opportunism) and online brand communities (access to information about buyers, suppliers and partners. Ashurst et al., (2012) suggest that because most IT competence research has focused on large firms, applying the competences to new SMEs must be treated with caution. Therefore, rather than measure the extent to which owner-managers of new digital enterprises possess the skills and competences described earlier, I focus on their experiences in taking advantage of ICT education and training in creating digital businesses.

In terms of market orientation, I follow Hair et al., (2012) suggesting that any new digital venture that has identified and mastered the technology needed to undertake defined business activity must grapple with market orientation as another central determinant of success in digital entrepreneurship, with success defined in terms of creating a new digital enterprise. Here market orientation is defined as the ways in which a digital entrepreneur focuses 'on customer and other stakeholder needs' (Hair et al., 2012: 2) in their target market. Hair et al., (2012) identified three determinants of market orientation in digital entrepreneurship: technological skills to sustain the digital venture, tools for managing an information-rich business environment and knowledge of the wider and more diverse marketplace available to digital enterprises compared to non-digital enterprise.

Onetti et al., (2012) discuss how new young ventures developed internet-based offerings by articulating various features and characteristics of "e-business", "web-based application", "b-webs", and "digital enterprise". Once an entrepreneur has developed the right ICT competence and market orientation, another challenge is to build a business model that can generate revenues to ensure survival and profit maximisation (Dasgupta, 2013; Oestreicher-Singer & Zalmanson, 2013). Bengtsson & Johansson (2014) suggests that due to liabilities of smallness and newness, new small digital firms try to enter the market by collaborating with

established partners (e.g. mobile network operators) to create legitimacy and secure "the status of 'best-of-breed' product providers in the market" (Bengtsson & Johansson, 2014: 403).

Digital Entrepreneurship and Local Context

The discussion from the preceding section reveal that the extent to which ICT as operant resource shapes digital entrepreneurship depends on the entrepreneurs ICT skills/competences, market orientation and liabilities of smallness and newness as complementary determinants of digital entrepreneurship. These factors obviously need to be considered in relation to the local context in which the digital entrepreneur operates. I use local context to refer to the 1) technology context and 2) geographic context, both of which impose contextual influences on the digital entrepreneur (e.g. Autio et al 2014). Mills & Pawson (2012) examine how nascent entrepreneurs in the ICT sector make sense of their start-up experiences by describing their approach to motivation, risk-taking and self-identity within the context in which they operate (in their case New Zeeland). In this case contextual influences include the choices that entrepreneurs make in pursuing opportunities and dealing associated challenges. Geographic context includes the country under study while technology context include the ICT industry in which the firm operates. In addition to country and industry sector, Gill & Larson (2014: 522) suggest that local context also represent the place and the regional development of high-tech entrepreneurial identity.

Javalgi et al., (2012) discuss how the advancement of information technology provided a technology context that enabled Indian entrepreneurs to engage in entrepreneurial activities and innovation, while country context include government policies providing (e.g. to support small businesses), social and economic integration (exposure to global business opportunities). Thus, broadly speaking local context relates to industry-specific and country-specific opportunities and challenges that digital entrepreneurs have to grapple with when engaging in

digital entrepreneurship. The contextual influences include the entrepreneur's choices about the use of the ICT skills (Adeboye, 1996) to engage in digital entrepreneurship as a career choice (Beeka & Rimmington, 2011; Liñán, Urbano & Guerrero, 2011) and strategies they adopt in order to operate successfully (Woldesenbet, Ram, & Jones, 2012; Javalgi et al., 2012). The next section clarifies the specific local context of Cameroon.

THE LOCAL CONTEXT FOR DIGITAL ENTREPRENEURSHIP IN CAMEROON

The development and use of information and communication technologies (ICTs) in Cameroon has a relative recent history. Whereas dial-up services at local call rates were only available in the two biggest cities (Yaounde and Douala) in the 1990s, developments in ICT infrastructure in the past five years has led to increased diffusion and use of ICTs in other parts of the country (Petrazzini & Kibati, 1999: 36). Within 2000-2008 internet usage grew by 1750% (Hinson & Adjasi, 2009: 312) and an estimated internet penetration rate of 12%, Cameroon is ranked in the top 15 in Africa (Nwagwu & Ibitola, 2010). The establishment of mobile networks in 1998 and continuous upgrading by multinationals (e.g. Orange, MTN and CAMPTEL) has increase mobility of people, products and services in many parts of the country (De Bruijn, Nyamnjoh & Angwafo, 2010; Fillion, Mvuyekure, Nguejo, & Ekionea, 2012; Nkwi, 2009; Tawah, 2013).

A number of entrepreneurial activities have already been attributed to developments in ICT infrastructure. Nkwi (2009) describes how many young school drop-outs create micro-business - public phone booths in which airtime bought from major dealers (MTN and CAMPTEL) are sold for conversational and money transfer purposes. Mobile phone versions of social computing models (Oestreicher-Singer & Zalmanson, 2013) have being championed by international health agencies to establish two-way communication channels between hospitals and patients thereby reducing instances of missed hospital appoints and increasing adherence to treatment (Bigna et al., 2013; Mbuagbaw, Thabane & Ongolo-Zogo, 2013).

Informal buy-sell market traders in rural regions increasingly depend on mobile phones for their business and livelihoods activities (Tawah, 2013). Crucially, a new generation of digital entrepreneurs are emerging Cameroon, as seen in a recently created ICT Hubs model called Activspaces Model with branches in Buea (South West Region), Douala (Littoral Region) and Yaounde (Central Region) of Cameroon (Gathege & Moraa, 2013). Such hubs enable new digital entrepreneurs to come together, bounce ideas off each other with funding support from international philanthropic foundations (e.g. Omidyar Network, Salesforce Foundation) and technical support from multinational firms (e.g. Google Developers Group) (Ngoasong et al., 2015). However, no study has been conducted on digital entrepreneurship in Cameroon.

Government policies have also played a role in the above developments through state-sponsored multimedia resources centres and associated ICT training centres in universities, colleges and secondary school (Nzèpa & Keutchankeu, 2007; Ndongfack, 2007; Josué, 2007; Wunnava & Leiter, 2009). Through a series of legislation, 'imported computers and their accessories were to be duty free for schools' from 2001 (Josué, 2007: 4) and 80% of nursery and primary schools were to be equipped with some ICT infrastructure, including a national curricula for teaching ICT (Ndongfack, 2007). However, without specialised entrepreneurship courses (Kabongo & Okpara, 2009), technology-oriented graduates may struggle to create innovative digital businesses (e.g. Adeboye, 1996). Potential digital entrepreneurs also have to deal with country-specific challenges facing all other ventures in the country - access to finance, lengthy bureaucracy for setting up and operating a new business (Kimbu & Ngoasong, 2013; Pougue & Bernasconi, 2013). These factors represent local context factors that need to be considered to understand digital entrepreneurship in Cameroon.

RESEARCH METHOD

Case Studies

I adopted a purposeful qualitative research design with multiple case studies. Digital entrepreneurship is nascent in Cameroon. Qualitative methodology is appropriate for building theory in such a setting (Bruton, Khavul & Chavez, 2011). Although I focus on Cameroon many of the local context factors that shape digital entrepreneurship are similar to those in other emerging economies. I used purposive sampling to select digital entrepreneurship ventures (see Table 1) following two specified criteria. First, the firms must belong to the digital sector, as defined in the literature review. Second, the digital entrepreneur is an entrepreneur-owner manager that can be categorised either as a nascent entrepreneur or baby owner-manager defined according the Global Entrepreneurship Monitor's criteria (Autio, 2005; De Clercq & Arenius, 2006).

I constructed a list of potential entrepreneurs by contacting Activspaces, the main ICT Hub in Cameroon with branches in Buea (South West Region), Douala (Littoral Region) and Yaounde (Central Region) of Cameroon (Gathege & Moraa, 2013). I also contacted potential entrepreneurs using my own informal networks, having conducted several research projects on Cameroon. From these initial contacts, subsequent referrals and examining websites of a number of digital enterprises I developed 16 case studies of digital entrepreneurs from within a range of digital enterprises. Although there is no specific example of an enterprise that failed after successful launch two case studies discussed initially failed attempts and the thinking process leading their current digital enterprise.

In terms of demographic, only one of the entrepreneurs is a woman, which is insignificant because am not interested in the role of gender. 2 cases are less than a year and the entrepreneurs are still uncertain about their launch. Those that have operated for more than

42 months (and therefore did not fit the baby-manager criteria) were considered because they started as informal businesses and became ltd companies less than 42 months to the period of this study. This notion of the informal economy in which businesses avoid the administrative bottlenecks to business registration is well documented (Spring, 2009; World Bank 2014), including studies of international businesses in emerging markets (e.g. Bruton et al., 2011). Common initiative groups (CIS) operate a cooperative model in which members' taxes are paid for investments where the investor charges an interest but not for business operations that uses members' contributions as investments.

Table 1 Demographics of case studies

Case Study	*Legal Status*	*Digital business*[a]	*No. of staff*[b]	*Start-up capital (US$)*[c]		*Years in Business*	*ICT Education*
				size	*Source*		
1	Informal	'online chatroom for people to discuss about what they are watching on TV'	6	7000	Own funds, Venture Prize	3 years	High School
2	CIG	'digital platform that connect users to travel providers' itineraries & allows providers to sell tickets to users'	5	7500	Own funds, venture capital	2 years	BSc
3	Ltd Company	'online urban guide providing information about local businesses and house search on web, mobile apps, & SMS'	6	5000	Own funds	3 years	BSc
4	Informal	'multi-media business'	5	9500	Self-funded	8 years	Self-study
5	Co-operative	'digital platform that connects food-stuff farmers to consumers via web, mobile app & SMS … now add an e-commerce platform'	6	14500	Grant, Venture Prize, Own funds	4 years	BSc
6	CIG	'web platform that links international tourists to local tourism agencies and tour guides in Cameroon'	5	1500	Self-funded	6 months	Diploma
7	CIG	'a web and mobile app chatroom for people to discuss about what they are watching on TV'	3	1350	Self-funded	11 months	Self-study
8	Ltd company	Security systems, networking systems, telecommunication systems and other ICT-related services	8	20000	Self-funded	Early 2004	BSc
9	CIG	'e-payment and e-commerce platform accessed via web and mobile app'	2	11000	Own funds & Crowdfund	2013	BSc

10	CIG	'cyber café, internet services and ICT training'	9	17000	Own funds & Foreign Grant	2009	Self-study
11	Ltd Comp-any	'cyber café, phone booth, computer maintenance, print & multi-media services'	8	10500	Family investment	2008	MSc
12	Ltd Comp-any	Cyber café, website development, ICT consultancy	4	15000	Own funds	2005	BSc
13	CIG	'website of information services about national exams'	2	2300	Own funds	6 months	BSc
14	Consul-ting contracts	'buy-sell mobile phone airtime from large telecom providers to call boxes'	1	1000	Self-funded	4 years	High School
15	Co-founding	'design website, develop mobile apps & provide IT systems support'	10	12000	Own & family funds	2006	HND
16	Co-founder	'digital market where people can make group purchases even without access to the internet'	8	25000	Own funds & VC	2012	BSc

[a] As described by interviewees; [b] Includes founder and part-time staff; [c] Exchange Rate: $US 1: 578 CFA Francs rounded-off to nearest hundred.

Data Collection and Analysis

The selection of participants and interview questions were guided by my research questions and literature review, including how these relate to the local context of Cameroon. This approach provides an opportunity to collect relevant context-specific data (Mills and Pawson, 2012). I conducted in-depth semi-structured interviews with each owner-manager during May-June 2014. Where a digital enterprise was co-founded questions were asked about the role of each co-founder in the creation and management of the enterprise. The interviews typically lasted between one and two hours, and occurred either in the entrepreneurs' place of business or a mutually agreed place in the entrepreneur's city. I also recorded all the interviews. During June-December 2014 I followed developments in each of the digital enterprise – reading about updates on their websites, informal follow-up email exchanges, external information on the web in which some of the enterprises were referenced and informal discussion with some of their customers. This proved helpful in confirming the information provided in the interviews.

I manually transcribed, coded and content-analysed all the interviews to isolate themes and patterns that could be used to examine the nature of digital entrepreneurs in Cameroon. At

the same time I isolated sections of transcripts that I used to support the empirical analysis as direct quotations (Kimbu and Ngoasong, 2013). I validated my data analysis using five experts on Cameroon (a local ICT consultant for large telecom provider, two university lecturers on entrepreneurship and computer sciences respectively, and an owner-manager of an ICT firm that have been operating for over 10 years). Purposive sampling opens up my findings to external appraisals and transferability of my research approach to other settings. In the next section I present my use of the field evidence to answer my two research questions and at the same time generate five testable propositions as a foundation for future research.

FINDINGS

Three findings emerged from the cases I developed. My first finding is that digital entrepreneurs who either had an educational background in computer sciences or a passion for ICTs demonstrated a clear vision for seizing the entrepreneurial opportunities created by society's increasing adoption and use of ICTs. My second finding is that the degree to which a newly created digital enterprise depends on ICTs to execute its operations affects the likelihood of success in digital entrepreneurship. Those digital entrepreneurs whose business models require physical contact between key stakeholders were more likely to re-design their business strategy or risk failure. My third finding is that knowledge of the country-specific context and capabilities to deal with the associated contextual influences are necessary conditions for successfully launching a digital enterprise. Such findings pose a range of questions about how digital entrepreneurs justify their entry choices and make decisions about when and how to innovate, and how to run their digital businesses. I discuss each of these findings in detail and develop five testable propositions on the nature digital entrepreneurship emerging economy.

ICTs as Operant Resource that Shapes the Nature of Digital Entrepreneurship

Entrepreneurs who create digital enterprises demonstrate technical and communication skills in digital innovations. ICT competencies offers entrepreneurs the ability to make technology work (Ashurst et al, 2012) in a way that enable them to provide innovative solutions to the market opportunities they have identified. The acquisition of ICT skills, through either a university degree, professional certificate or self-study of computer sciences, information management, and web/mobile development by the main founder or at least one co-founder initiated the process for creating of a digital enterprise. In my study, entrepreneurs who successfully created a digital enterprise were actively using their knowledge of ICTs to identify and offer innovative solutions to the problems facing society. Consider the following example:

> *Entrepreneur 2:* Towards the end of our university studies, my co-founder and I wanted to solve what we saw as a major challenge in our society. We developed a simple platform that can connect users to bus companies' travel itineraries. But then we realised that there were two categories of clients that we could target, the users or travellers and the bus companies or travel providers. So we had to re-develop the digital platform such that it can also be used by the bus companies to sell tickets to travellers. To us technology is the core. Without technology we don't have a solution and without a solution we don't have a product. Without a product we don't have an enterprise.

All the entrepreneurs who had formal ICT education spoke along a similar line to Entrepreneur 2. Even for those case studies with two or more co-founders, the original business idea came from the co-founder with a background in ICT. The entrepreneurs explained that they use student interns on an ad-hoc basis to help to explore new solutions/innovations to keep pace with developments in ICTs, especially in an ICT constraint setting such as Cameroon. For those without formal ICT education, but who were very passionate about new technologies, self-studying ICT provided them with the skills to develop their digital enterprises. Such

entrepreneurs demonstrated that ICT as operand resource is subjective and depends on an entrepreneur's perception. The responses from Entrepreneur 4 typifies this.

> *Interviewer:* How did your educational background prepare you for creating a digital enterprise?
>
> *Entrepreneur 4:* It was just a simple mission and just a passion. I have a BSc in journalism and mass communication, but it's something that I did because of means. I really wanted to study information technology but there was no means [referring to funding issues] so I said to myself 'what else can I study?' At that time there was no school of technology here so I decided to take communication. When I finished university my dad bought me this machine [pointing to a desk top computer] which is eight years old now. This is how everything started. I went to a friend's office, he gave me some space. I put in a table and sat with my computer and started learning and developing my business.
>
> *Interviewer:* So do you see the core of your business as ICTs?
>
> *Entrepreneur 4:* I refer to it as a media business. We help institutions to communicate online, on print, brochures, fliers because we do design fliers, brochures, letterheads and business cards. We provide assistance on general online marketing and search engine optimisation, and software development. When we look at a client's business we ask ourselves 'how can we make this person effectively pass across his/her information?' Basically we use ICT as a vehicle to do our business.

In other case studies that described ICT as enabler but where the entrepreneurs had no formal ICT education (e.g. Entrepreneur 14) self-study of ICTs enabled them to appreciate basic ICT tools as well as evaluate the opportunities, challenges and risks associated with digital entrepreneurship. Although the entrepreneurs describe ICT as enabler, it is clear from their business activities that ICT is the trigger (Lusch & Nambisan, 2015) in the sense that, without ICT, many of the digital innovations that enable the entrepreneurs to pursue certain kinds of opportunities would be impossible (e.g. the existence of a variety of new digital media).

Proposition 1: In emerging economies, those entrepreneurs who either have a formal ICT training or a strong passion for ICT have a higher likelihood than their peers of successfully creating digital enterprises.

Technology Context and Digital Entrepreneurship.

Successfully launching and operating a digital enterprise also depends on the entrepreneur's knowledge of the technology context and capabilities to deal with the associated contextual influences. This is related to the notion that technology provides the architecture within which key stakeholders interact and respond to any entrepreneurial/innovative activities undertaken by the entrepreneur (Autio et al., 2014). Stakeholders in this case include customers, suppliers, employees and others associated with the digital enterprise. Those entrepreneurs whose digital enterprises rely on minimal physical contact with key stakeholders justified the effectiveness of the business operations in terms of technology being the core architecture. Entrepreneurs 1, 2, 3, 6, 7, 9, 13, 15 and 16 are typical examples. The description by Entrepreneur 6 provide a typical illustration of a digital enterprise in which ICT constitutes a very component of the business's operations.

> *Entrepreneur 6*: I come from an area where there are lots of lakes, caves and mountains so I wanted to create a tourism agency but considering the fact that I am a tech guy, a web developer, I wanted something more on the web. Now I see the core business as technology. To an extent there is tourism because the platform is dealing with tourists and tourism agencies. I put the profile of local tourism agencies, their packages and tourist attractions and their tour guides in order of experience. When a tourist sign-up on the platform they are able to see this information. The tourist pays the full cost of the package to me and am the one to pay the local agency after deducting my commission. So basically I sell the tour packages of local agencies online just like you shop online.

In addition to the time-saving suggested by Entrepreneur 6 above, all the interviewees identified additional cost-savings accruing from a high dependence on ICT, which contribute to the success of their enterprise. The most notable additional cost-savings is the fact that they were able to create a business with a global reach with very minimal start-up capital.

> *Interviewer*: Is it true that you in ICT businesses need very little capital to start a business? If yes how do you spend money?
>
> *Entrepreneur 2*: It's relative. It is true that for hardware and things like agriculture, they really have to invest in physical assets, but we don't have to. We just need our laptops and a single office. But we do spend money. First and most important costs is technical infrastructure, servers, modems, getting express and upgraded service for our products. Then you have costs for SMS purchase. Apart from that we pay our staff, utility bills, running our office. But our major costs is technical infrastructure and staffing.

As the above examples suggest, the more a digital enterprise relies on ICT as the main architecture that shapes interactions with key stakeholders the more likely that it will survive its first few years of operation. From this context, Entrepreneurs 8, 10, 11 and 14 occupy the intermediate position between digital businesses that rely solely on ICT to operate their businesses and those that rely on physical interactions with other actors in the value chain. Entrepreneurs 8, 10, 11, 14 explained that computer hardwires and physical space are critical in the success of their business and these are expensive (e.g. upgraded computers, servers and internet access to sustain cyber cafés, larger physical space to accommodate students on ICT training programmes). On the other hand, entrepreneurs 4, 5 and 16 demonstrated how physical interactions with other stakeholders in the value chain is crucial for the success or otherwise of their digital enterprise.

> *Entrepreneur 4:* We focus on IT because our start-up capital was very small. We do plenty of designs but we find that many of our clients have to go and print elsewhere. The concept may be

> more valuable than the printing but the printing brings more money than the concept. If we had the capital requirements we could handle the process from beginning to end and the clients will be more committed to us. We have clients who print between 1000 and 5000 flyers for publicity, but we do the design and give them the soft copy. My calculations tell me that doing the printing definitely give us higher margin, investing in it leaves me nothing to eat for a long time.

The experience of Entrepreneur 4 is one of a lack of capital. This is related to the liability of smallness (Bengtsson & Johansson, 2014), part of which is caused by limited access to affordable financing in emerging economies in Africa (Kimbu & Ngoasong, 2013; Kshetri, 2011; Pougue & Bernasconi, 2013). In this case small digital enterprises are better-off staying small in the short and medium-term as this allows the owner-managers to sustain the livelihood of his/her family, especially after deciding on entrepreneurship as a career option (Beeka & Rimmington, 2011). Other entrepreneurs spoke of how the rely on large telecom companies for SMS provisions because of a lack of technical resources in terms of finances to build their own mobile platforms (e.g. Entrepreneur 2, 5 and 16). So it's just (inaudible), so these will be our partners in both companies. Handling the entire value chain from design to printing and delivery to the customer would cause Entrepreneur 4 to incur the types of additional expenses described earlier by Entrepreneur 2 (e.g. large printing equipment, larger physical space, delivery of printed material to clients).

> **Proposition 2.** In emerging economies, digital entrepreneurs with limited start-up capital are more likely to succeed by creating digital enterprises that rely on ICT infrastructure to manage interactions among key stakeholders within their enterprise's value chain.

Unlike Entrepreneur 4, the nature of physical interactions in the case of Entrepreneurs 5 and 16 are of a similar nature. While the initial business model developed by Entrepreneur 5 did

not work due to challenges associated with warehousing and logistics, Entrepreneur 16 had a more developed market orientation (Hair et al., 2012) which meant that an innovative solution to such challenges had been designed from the onset.

> *Entrepreneur 5:* I started this [digital business] as an ICT project to connect farmers to urban consumers and markets abroad. Since farmers didn't have access to the internet we send it to them through text messaging using mobile phones and vice versa. The model did not work because it was built around an ICT concept that facilitated information exchange but failed to actually make sales or trades happen – goods and money did not change hands. We realised that a physical player was needed that will facilitate logistics and actually getting involved in direct deliveries. We revised our model such that we now have warehouses where farmers take food to and shops were consumers come to pay and collect their foodstuff. Maybe we are not a tech firm anymore.

> *Entrepreneur 16:* Our business tackles three major access issues in our society, limited access to online marketplaces, means of payments and the internet. We developed an online marketplace where people, including the unbanked, can buy and pay for essential goods with their mobile phones, whether they have an internet connection or not. Our survey showed that more than 80% of local retailers (people who import goods from places such as China or Dubai or wherever and sell in physical shops) are interested in buying in group with others to reduce the unit price and especially because it will reduce their logistics cost. So our first target is on B2B wholesale buyers. Foreign sellers ship products directly to our local buyers or use one of our recommended logistic providers so we eliminate the challenges of managing warehousing and local distribution.

The description of Entrepreneur 5 and 16 demonstrate that those entrepreneurs who are able to deploy the necessary ICT skills at the same time as the right orientation are more likely to develop innovative digital enterprises.

Proposition 3. Those digital entrepreneurs with the right market orientation and who are able to deploy innovative digital solutions to the problems affecting their society are more likely to succeed in creating digital enterprises than their peers.

How Geographic Context and Digital entrepreneurship

As developed in the literature review, I use geographic context (Autio et al., 2012) to refer to the extent of diffusion and use of ICTs in the country and the associated opportunities and challenges to digital businesses. Cameroon is an ICT constrained setting due to the relatively low rate of diffusion and use of ICT by global standards. There were notable similarities and differences in the experiences of the 16 entrepreneurs I interviewed about how to understand and respond to opportunities and challenges associated with geographic context. The most notable similarity relates to the key geographic factors that shape the choices that entrepreneurs make about various component parts of the enterprises (Table 2).

Table 2 Key geographic influences on digital entrepreneurship

Key themes	**Example quote**
Small market size, unreliable energy supply, unreliable internet connection, absent of affordable domain providers locally	*Entrepreneur 1:* Cameroon is a very small market and internet connection is a problem, yeah, because of power outages and the internet connection is not always reliable. So we designed a new strategy that we want to target bigger markets. For we have started to targeting Nigeria and after that we are going to target other neighbouring countries. *Entrepreneur 3*: Our domain providers are in USA but we engage with them very often. Sometimes when things like the server goes down for 24 hours and a repair is promised we get to them and talk. When SMS are down or the lines are not going through we have to get back to them to fix the problem. We've tried to create an alternative to the problem of internet, though the person with internet will benefit more. The person without the internet on a 2G phone can still use the service through SMS, even though not as good as the person with the internet service.

Marketing: accessing customers in an ICT constraint setting	*Entrepreneur 6:* I rely on referrals by friends in Cameroon and abroad. I provide them with flyers. I send online flyers to friends abroad who can also talk about it to their other friends. I try to access tourism agencies from government offices and for others I travelled to many touristic regions in Cameroon to find them. I would say this is the limited physical activity that I do. At the moment I am researching how to develop a digital marketing strategy. *Entrepreneur 12:* Marketing is a real challenge. Sending emails to potential clients or making phone calls is too expensive and time consuming and they do not work. I have tried newsletter, flyers, and direct visits. These other ways are better because you are also trying to change the culture. For example some of my clients are advertisers and many of our small businesses are not used to spending money on online advertising so we try to attract them by also educating them.
Logistics and local distribution channels	*Entrepreneur 5*: There are about two different classes of logistics providers; there are those who are self-owners and just have their vehicles and go about offering logistics services and there are companies that are set up to provide logistics services. Now, our transactions do not qualify us to deal with large logistic providers and for the local self-employed providers it's really kind of a challenge to work with them because they don't have respect for time, no insurance which is very critical. So the best thing for us is to have our own transport vehicles and transport facilities. This is has become our major expenditure item.

The entrepreneurs I interviewed differed on the most appropriate decision to be made to deal with the geographic influences on their digital entrepreneurship strategy. In the first case, Entrepreneur 1 responds to the small market size, unreliable energy supply and internet connection by seeking foreign market opportunities. Here market orientation plays a major role (Hair et al., 2012) in shaping the entrepreneur's decisions. On the other hand Entrepreneur 3 responds by developing alternative innovative solutions using ICTs to penetrate existing markets in areas where affordable internet access limits the size of the market that is reachable by the enterprise's existing technology infrastructure. Here the entrepreneur's decision is informed by ICT skills/competencies (Ashurst et al., 2012).

In the second case, we how Entrepreneurs 6 and 12 respond to the challenges of pursuing market opportunities in an emerging economy were access to information about potential customers pose major challenges. The third case is related to an earlier discussion comparing

the experiences of Entrepreneur 5 and 16. As a result of taking on the challenge of handling logistics and local distribution in-house Entrepreneur 5 faces serious additional challenges (e.g. high costs and insurance issues). Entrepreneur 16 avoids these by using ICT to develop innovative alternative solution, which involves outsourcing logistics and distribution. This helps entrepreneur 16 to deal with the liability of newness (Bengtsson & Johansson, 2014).

> **Proposition 4.** In emerging markets, knowledge and capabilities to respond to the geographic challenges associated with digital entrepreneurship increase the likelihood of successfully launching and operating a digital enterprise.

> **Proposition 5.** In emerging markets, those entrepreneurs who are able to deal with the liability of smallness and newness by outsourcing component parts of their digital enterprises that require physical interactions with key stakeholders are more likely to reduce their operational costs than their peers.

CONCLUSION

Digital entrepreneurship in emerging economies is a nascent field in need of theory development by international business scholars. Digital enterprises can be country-specific, yet their reach crosses international boundaries. This calls for country-specific international business research to understand the role of ICT and local context in encouraging digital entrepreneurship. Using in-depth case interviews, I explore how an emerging country's baby-owner managers of small digital enterprises respond to local context challenges associated with digital entrepreneurship; and thereby contribute to existing studies on how entrepreneurs grapple with the opportunities and challenges of identifying and pursuing entrepreneurial

opportunities offered by developments in ICTs. Additional international business research to better understand digital entrepreneurship, especially in ICT-constrained emerging economies would complement my findings.

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